

Fizeau extreme high definition interferometer with patented QPSI™ acquisition for true on-axis common path metrology, and DynaPhase™ vibration insensitive acquisition, for precise metrology of optical surfaces and system wavefront in any environment.

SYSTEM OVERVIEW

Measurement Capability	Measures surface form of reflective materials and optics, and transmitted wavefront of transparent optics
Measurement Techniques	<ul style="list-style-type: none"> PSI mechanical phase-shifting QPSI vibration robust mechanical phase-shifting DynaPhase vibration insensitive acquisition (optional)
Alignment System	Quick Fringe Acquisition System (QFAS) with twin spot reticle
Test Beam Diameter	4 inch (102 mm) or 6 inch (152 mm)
Alignment FOV	4 inch: ±3 degrees, 6 inch: ±2 degrees
Optical Centerline	4.25 in. (108 mm)
Camera Details	Resolution: 3392 x 3392 pixels Frame Rate: 96 Hz Digitization: 8 bit
Acquisition Time	130 - 300 ms
Magnification	1-50X digital
Polarization	Nominally circular (1.2:1 or better)
Pupil Focus Range	4 inch: ±2 m, 6 inch: ±4.5 m
Computer and Software	High-performance Dell PC, Windows 10 64-bit, Mx™ software
Mounting Configuration	Horizontal or vertical
Remote	Wired and wireless full function remote
Accessories	Requires 6" UltraFlat™ for 4" aperture See the ZYGO <i>Laser Interferometer Accessory Guide, OMP-0463</i> for a full line of accessories
Physical Envelope (LWH)	69 x 31 x 34 cm (27.3 x 12.1 x 13.4 in.)
Weight	≤85 lb (38 kg)
Warranty	3 years laser source, 2 years system

LASER DETAILS

Laser Source	High power stabilized HeNe
Class	IIIa (meets 3R ANSI requirements)
Wavelength	633 nm
Frequency Stabilization	<0.0001 nm
Output Power	>3 mW
Coherence Length	>100 m

OPERATIONAL ENVIRONMENT⁽¹⁾

Temperature	15 to 30°C (59 to 86°F)
Rate of Temp. Change	<1.0°C per 15 min
Humidity	5 to 95% relative, non-condensing
Vibration Isolation	QPSI enables metrology in environments with vibrations of a magnitude of up to ~150 nm. A passive isolation system is recommended with PSI acquisition.



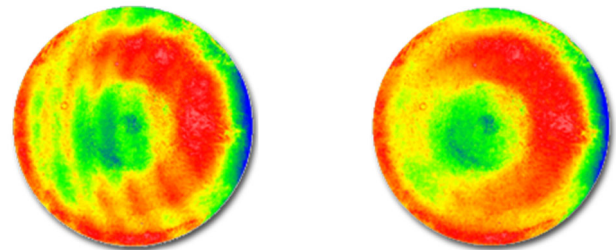
UTILITY REQUIREMENTS

Power	100 to 240 VAC, 50/60 Hz
Compressed Air	80 psi (5.5 bar); dry and filtered source (required for optional vibration isolation)

PERFORMANCE⁽²⁾

RMS Simple Repeatability ³	<0.06 nm, λ/10,000 (2σ)
RMS Wavefront Repeatability ⁴	<0.35 nm, λ/1,800 (mean + 2σ)
Peak Pixel Deviation ⁵	<0.5 nm, λ/1,200 (99.5 th %)
ITF ⁶	4 inch: >0.7 @ 8.2 cyc/mm 6 inch: >0.7 @ 5.2 cyc/mm

Comparison of acquisitions in vibrating cavity



PSI 13 bucket algorithm

QPSI 5 ms shutter speed

Notations

- These parameters outline the conditions under which the system can operate; they do not represent the environmental stability required to meet specified performance.
- Performance qualified with stable temperature set point between 20-23°C.
- RMS Simple Repeatability is defined by 2X the standard deviation of the RMS for 36 sequential measurements (16 averages) of a short 4 inch plano cavity.
- RMS Wavefront Repeatability is defined by the mean RMS difference plus 2X the standard deviation for the differential between all even numbered measurements and a synthetic reference (defined as the average of all odd numbered measurements); 36 sequential measurements (16 averages) form the basis for calculation.
- Peak Pixel Deviation is defined by the 99.5th percentile of the pixel-wise standard deviation map for 36 sequential measurements (16 averages); this result measures time varying behavior (or Type A uncertainties).
- Instrument Transfer Function (ITF) defines the spatial resolution capability of the instrument at ½ Nyquist for a short plano cavity.



Distribution in the UK & Ireland



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